J3 Technology

Custom Communication Solutions

February 8, 2018

FCC
Headquarters Building
445 12st SW
Washington, DC 20554

RE: GN Docket No. 13-111 FCC 17-25 Comments and Responses to Proposed Rule – 47 CFR Part 20 – Promoting Technological Solutions to Combat Contraband Wireless Device Use in Correctional Facilities

INTRODUCTION

On February 7, 2018, the FCC Chairman, Ajit Pai, chaired a meeting with government, carrier, and vendor participation to discuss possible technical solutions to combat the contraband cellphone problem in correctional facilities. The meeting was a turning point in the more than 10 year odyssey to find a practical solution to this problem because the issue of micro jamming was seriously considered as a solution. The meeting was conducted under the "Chatham House Rules" so the critical highlights will be presented below without attribution to the specific speakers.

VOICE OF THE CUSTOMER

All highly successful businesses say that the key to success is to listen to the "voice of the customer." In this case, the customers are the Department of Correction (DOC) officials who have to deal with the safety and security risks posed by contraband cellphones. Toward the end of the meeting (after all options had been discussed), the FCC asked the DOC officials in a round robin to vote on their desired technical choice if the two options of MAS or micro jamming were both allowed by the FCC (micro jamming is currently not allowed). The majority of the DOC officials voted for micro jamming over MAS. This was true even among DOC officials with fielded MAS systems. The customer has spoken – the unanswered question from the meeting is whether all the parties required to solve this problem will listen.

STANDARD JAMMING VS MICRO JAMMING

There was much discussion about "Jamming" without making the key distinction between "Standard Jamming" and "Micro Jamming." For clarity, Micro Jamming is a generic term used by the government to describe the "Shielded Micro Jamming" (SMJ) approach pioneered by J3 Technology. There are also multiple recent submissions into the record for GN 13-111 that refer to opposition to Jamming which

are actually discussing Standard Jamming, not Shielded Micro Jamming. Precise terminology matters when discussing complicated technical issues. The key differences are:

- **RF DELIVERY TO TARGET** – Standard Jamming either relies on powerful military type jammers (e.g. 100W jammers similar to the one used during the 2010 NTIA Cumberland study) or on lower power jammers that use a DAS for RF delivery. In contrast, SMJ uses lower power jammers with proprietary techniques to focus energy directly on the target cell.
- **RF BLEED** – Standard jamming does not use special techniques to stop RF power from bleeding into the area surrounding the target area. In contrast, SMJ uses proprietary techniques to quickly dissipate RF power outside the target area.

Standard Jamming will NOT solve the contraband cellphone problem. However, SMJ technology can, and will, solve the problem if given a chance to prove itself at both the Federal and State levels.

2018 BOP/NTIA CUMBERLAND DEMO

J3 Technology presented the Shielded Micro Jamming approach used on the January 2018 BOP/NTIA demo at Cumberland FCI. The test was conducted on a single cell within the facility and there were two objectives:

1) **POWER ON TARGET** - show that there was enough power on target to block the test phones

2) **RF BLEED** - reduce RF bleed to acceptable levels at 100 feet from the building.

All phones (100% coverage) were blocked as demonstrated by J3 Technology testers as well as government personnel. NTIA will produce a formal report on the RF performance, but preliminary data looks very good.

WORKING GROUP

One of the attendees associated with the carriers agreed to lead a working group that will include carriers, government personnel, and vendors. The working group will discuss different approaches and have some form of test bed to evaluate their effectiveness. The government asked if micro jamming would be part of the mix of technologies to be tested and evaluated at the state and federal level, and was assured that it would. J3 Technology would be happy to discuss the SMJ approach with the carriers and suggests that the testing take the form of a larger demo at Cumberland FCI (perhaps a whole building).

SUMMARY

The meeting was a major step forward in solving the contraband cellphone problem. J3 Technology would like to summarize the benefits of SMJ which include:

- **EFFECTIVENESS** – The state DOC leadership made it clear that what they need is to "block the cellphones." DAS systems are designed to ***augment*** carrier signals rather than ***dominate*** them. As Prelude Communications said in their comment dated April 28, 2017 regarding DAS-based MAS systems – "95% facility coverage is far from 95% effectiveness. The inmates have unlimited time to find those areas where the system is not effective and use the phones in those areas." SMJ techniques (based on four patents pending) provide significantly better coverage than DAS-based approaches. J3 Technology believes that SMJ will achieve greater than 99% coverage in the targeted areas.
- **RF BLEED** – Because of the targeted approach used in SMJ, it allows a very clean RF profile that will not interfere with the carrier signals at a distance of 100 feet from the targeted building.
- **PRICE** – The initial price for an SMJ system is significantly less than the price for a comparable MAS system. However, the savings don't stop there. Because of the small footprint of the SMJ system, the recurring costs for operations and maintenance are far less than ½ of that for a comparable MAS system.
- **DEPLOYMENT TIME** – Because the SMJ approach is based on analysis of the RF spectrum, rather than a detailed targeting plan for the channels in market, the site survey, planning, deployment, and certification (for a production system) will typically take 3 months for a facility.
- **RELIABILITY/MAINTAINABILITY** – Because of the modular approach and the battle hardened design, the individual units are extremely reliable with built-in redundancy, and can be quickly replaced in the field in case of a problem.
- **RESISTANCE TO ATTACK** – The SMJ units were designed from the ground up by former NSA design engineers with extensive experience deploying battle hardened equipment worldwide. The Correctional Facilities are about as close to a war zone as you can get in the US.
- **RESPONSIVENESS TO NEW STANDARDS** – Because the SMJ approach is based on analysis of the RF spectrum, it needs no upgrades for new protocols and standards. Expandability in terms of supported frequency bands (including WiFi if desired) is built in to each SMJ box.

We thank the FCC for the very productive conference and look forward to an ongoing discussion and collaboration to arrive at a solution that finally solves the contraband cellphone problem.

/s/
J3 Technology LLC

FOOTNOTE: *The founders of J3 Technology previously worked as consultants for Securus/Cellblox performing successful deployment of MAS systems. They are still under mutual NDA. None of the information contained in this document is based on any Securus/Cellblox information.*